

Climate and Oceanographic Summary, Great Australian Bight 2015 - 5

Kirsten Rough – 28th December 2014

This is a brief update of prevailing Sea Surface Temperature (SST), chlorophyll distribution and seismic survey activity in the Great Australian Bight (GAB) region.

Summary:

GAB Sea Surface Temperatures continue to warm slowly. Latest satellite images suggest SST is currently very suitable for SBT along the shelf-break west of longitude 133°E and inshore to around longitude 134°E.

Warmer surface water masses are beginning to show directly south of Lower Eyre Peninsula and south-southeast of Kangaroo Island.

The upwelling system of the South East coast of SA continues to be a prominent feature of satellite images. And the coastal zones along Kangaroo Island and the west coast of Eyre Peninsula have water up to 2°C cooler than the surrounding water masses of the central shelf area.

If anyone is flying in the western or central GAB please record approximate distance of sightings from the seismic vessels. There are 2 operating at the moment, the transect positions they are surveying appear in tables at the end of this update. Please also record any unusual observations such as water clarity other species behavior and approximate locations that this occurs.

GAB Sea Surface Temperature (SST):

The most recent 3-day composite satellite image of water temperatures adjacent to Western and Southern Australia is shown in Figure 1. There is a larger mass of warm water extending southwards along the WA coastline at the moment, but there is nothing visible at this stage to suggest a similar scenario to 2013.

An image of the GAB area and the graph of actual temperatures along the shelf break are shown in Figure 2. The GAB area continues to warm slowly. The leading edge for the majority of SBT along the outer shelf area remains around longitude 133° but extends to 134° closer inshore. A satellite pass on the 27th shows a large mass of warmer surface water, up to 20.5°C, between longitudes 134°34'E and 135°52'S; and another mass to the south and southeast of Kangaroo Island. Both of these are to the north of the drop-off at the shelf break, and the western area extends into the fishing areas around the Cabbage Patch.

The upwelling system of the South East continues to show cold water at the surface. The upwelling zones along the south west coast of Eyre Peninsula and Kangaroo Island also have areas of cooler water. Some of these areas along this coastal fringe that are now up to 2°C cooler than the general shelf area.

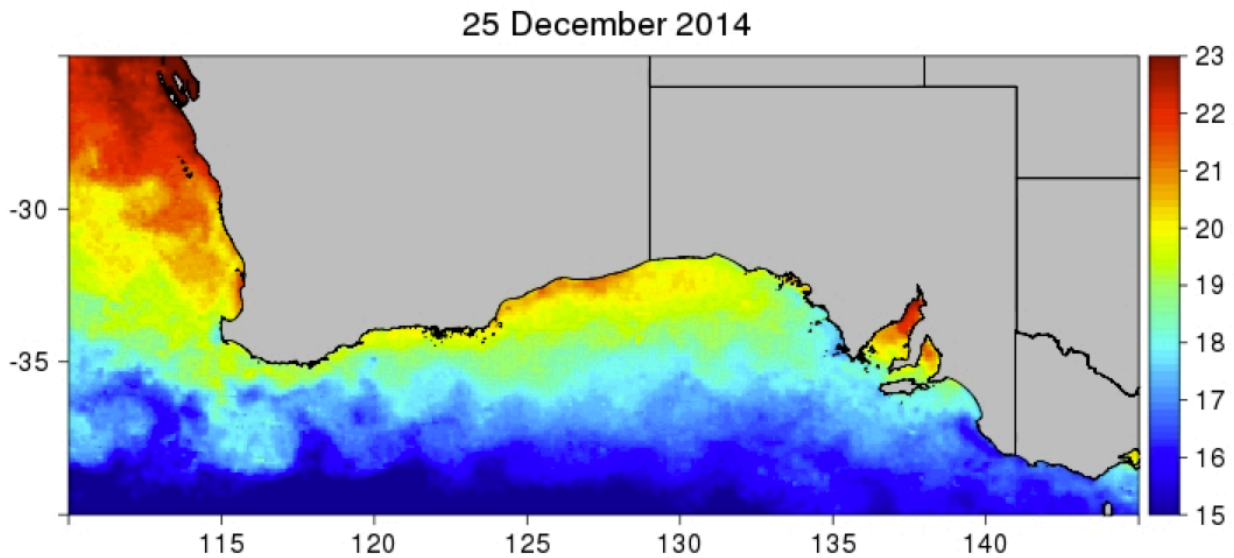


Figure 1: Sea Surface Temperature adjacent to Western and Southern Australia (CSIRO 2014).

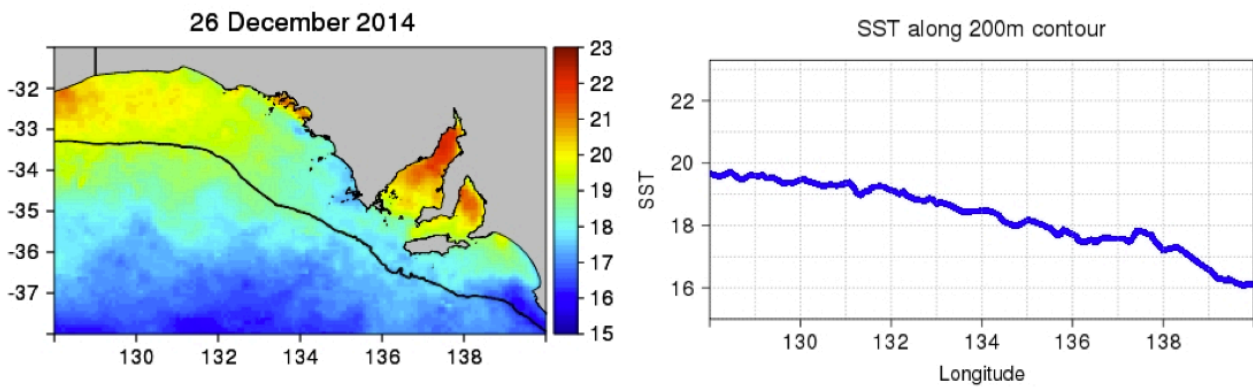


Figure 2: Sea Surface Temperatures through the GAB for the 3-day period to 28th December 2014 satellite image (left) and graph of temperatures along the shelf break (right) (CSIRO 2014).

Chlorophyll / Productivity:

The latest clear satellite image of where chlorophyll is concentrated was taken yesterday and is shown in [Figure 3](#) below. Concentrations continue to increase around coastal areas that are fed by the upwelling. The large area to the southeast of Kangaroo Island last week appears to have dispersed. The grey areas appear where the cloud cover is too thick to obtain an image.

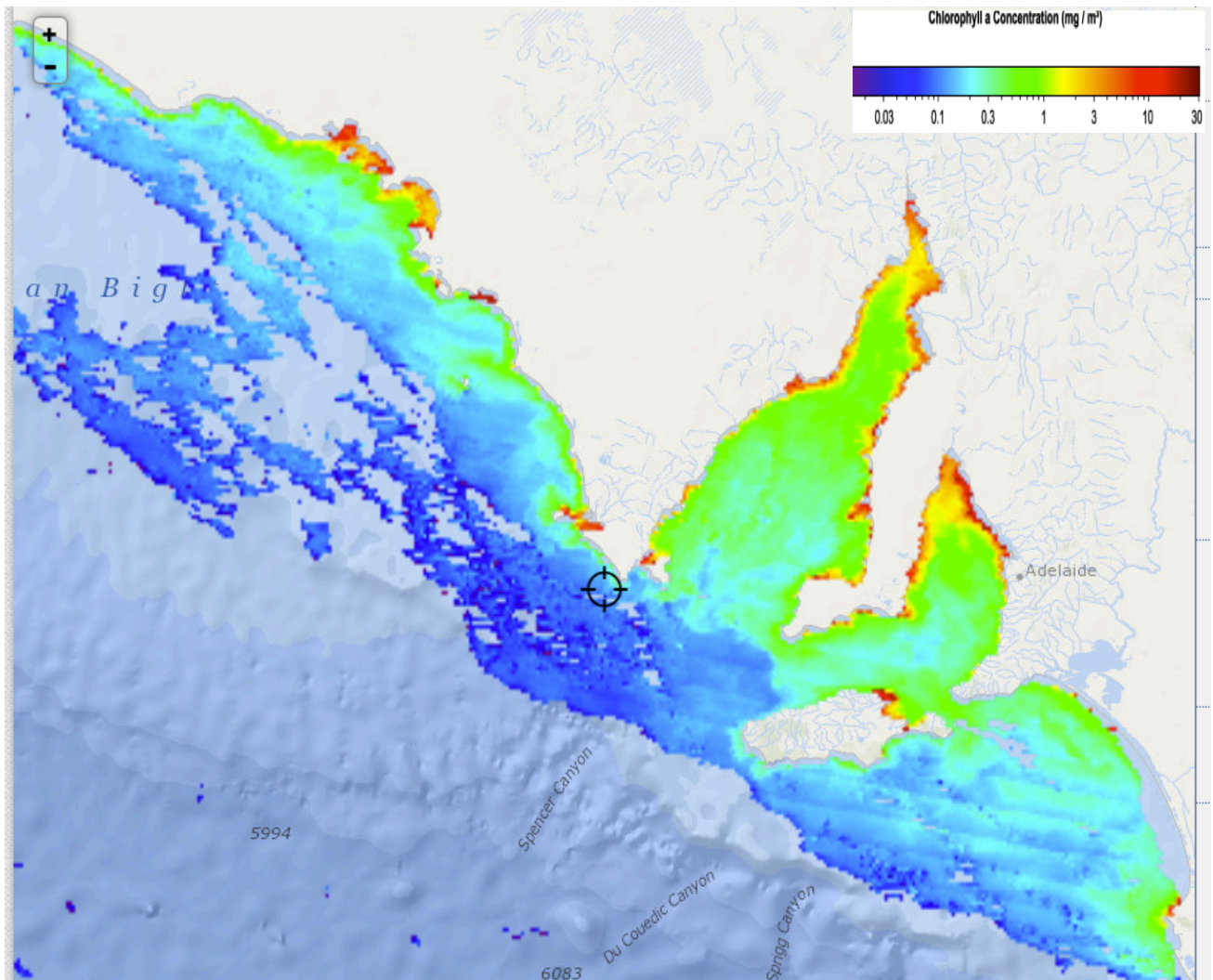


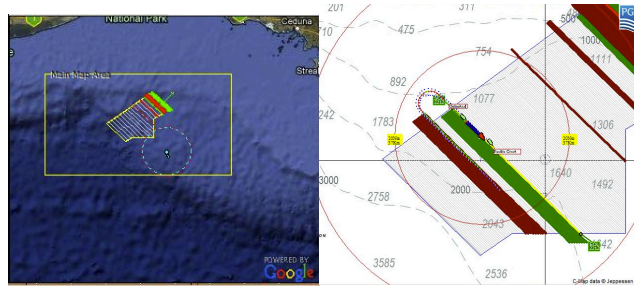
Figure 3: Chlorophyll levels on the 27th December 2014 (FishTrack 2014)

Seismic Surveys:

Specific details for the daily activities of each company appear in the summary tables below. Small numbers of 1.5 - 2kg Skipjack tuna are now being sighted in the PGS survey area. No SBT have been sighted by either survey.

PGS (Petroleum Geo-Services):

Survey Area: 13,800 km² western GAB between longitudes 129°05'E and 130°50'E currently operating towards south-western end of site in water depths of approx 1500m



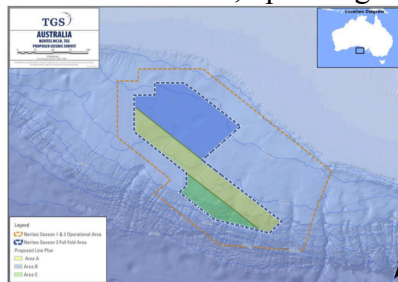
All times in the table below are quoted in UTC (Please add 9.5 hours to convert to SA time zone)

Times - Please note that timings are approximate due to variable currents and operational considerations

Plan Step	Preplot Name	Preplot Start	Preplot End	Azimuth	Duration	SOL	EOL
1	1876	034°16'22.680"S, 130°00'27.560"E	033°49'4.473"S, 129°27'11.259"E	315.0°	8:46	Dec 27 19:33	Dec 28 04:19
2	2212	033°47'20.961"S, 129°34'23.242"E	034°17'54.609"S, 130°11'44.401"E	135.0°	9:50	Dec 28 07:31	Dec 28 17:21
3	1900	034°16'22.460"S, 130°01'7.510"E	033°48'50.148"S, 129°27'33.736"E	315.0°	8:50	Dec 28 21:09	Dec 29 06:00
4	2236	033°47'7.197"S, 129°34'46.376"E	034°17'54.898"S, 130°12'25.063"E	135.0°	9:54	Dec 29 09:12	Dec 29 19:06
5	1924	034°16'22.810"S, 130°01'48.170"E	033°48'36.405"S, 129°27'56.906"E	315.0°	8:55	Dec 29 22:53	Dec 30 07:49

TGS-NOPEC Geophysical Company:

Survey Area: 17,200 km² Central GAB between longitudes 130°52'E and 132°46'E continue to operate the long central area of the site, operating in water depths in excess of 1500m



Note times are in UTC, add 9.5hrs for South Australian time, and another hour for daylight savings

Plan Step	Preplot Name	Azimuth	SOL	EOL	Duration	Line Change Time	Preplot Start	Preplot End
1	2573	315.0°	Dec 28 00:37	Dec 29 04:09	27:31	0 minutes	035°37'52.880"S, 132°45'18.620"E	034°10'10.694"S, 130°52'40.622"E
2	2261	135.0°	Dec 29 07:20	Dec 30 10:35	27:14	3:10	034°18'43.316"S, 130°54'34.086"E	035°43'11.254"S, 132°43'12.651"E

Useful Websites:

<http://www.bom.gov.au>

<http://www.csiro.au>

<http://www.fishtrack.com>

<http://www.oceancurrent.imos.org.au>

<http://www.emar.csiro.au/gab-forecasts/index.html>

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